In the Claims

1. (Currently amended) An optical attenuation device comprising an input/output on which a multiplexed optical input stream is received, a multiplexer/de-multiplexer (MUX/DEMUX) for separating the received stream into individual optical signals on individual channels, an output/return path from the MUX/DEMUX for each of the channels, reflector means in each output/return path for reflecting all or a proportion of the optical signal on the respective channel back along the output/return path to the MUX/DEMUX and the optical signals are re-combined by the MUX/DEMUX into a multiplexed stream which is output on the input/output[[,]] wherein at least one reflector means comprises a mirror in combination with a controllable, optically absorbing material.

2. (Original) An optical attenuation device according to claim 2 wherein at least one reflector means comprises a MEMS actuated mirror.

3. (Currently amended) An optical attenuation device according to claim 2 wherein ~~the or~~ each mirror is displaced longitudinally, transversely or angularly thereby to control the proportion of individual optical signal reflected.

4. (Currently amended) An optical attenuation device according to claim 2 wherein ~~the or~~ each mirror is electrostatically actuated.

5. (Currently amended) An optical attenuation device according to claim 2 wherein ~~the or~~ each mirror is fabricated using semi-conductor material substrates.

6. (Original) An optical attenuation device according to claim 1 wherein at least one reflector means comprises a MARS-type device including two mirrors arranged generally parallel to one another thereby to define a cavity with the relative spacing

of the mirrors variable so as to control the proportion of optical signal reflected according to interference effects.

7. (Cancelled)

8. (Original) An optical attenuation device according to claim 1 wherein the MUX/DEMUX is a planar waveguide device.

9. (Currently amended) An optical attenuation device according to claim 1 wherein the MUX/DEMUX is ~~which may be~~ fabricated from semi-conductor material substrates.

10. (Original) An optical attenuation device according to claim 1 further comprising a circulator or an entity of equivalent function which enables the output multiplexed stream to be diverted on to a different branch from the input multiplexed stream.

11. (Currently Amended) An optical attenuation device for attenuating a multiplexed optical stream comprising means for attenuating each of the individual optical signals of the stream in parallel wherein the means for attenuating comprises reflector means such that attenuation is achieved by reflecting all or a proportion of an optical signal on a respective channel and the reflector means comprises a mirror in combination with a controllable, optically absorbing material.

12. (Currently amended) An optical attenuation device comprising an input on which a multiplexed optical input stream is received, a first MUX/DEMUX separating the received stream into individual optical signals on individual channels, an output path from the MUX/DEMUX for each of the channels, attenuator means in each output path for attenuating the optical signal on the respective channel, a return path from the attenuator means for each of the channels, a second MUX/DEMUX at the

ends of the return paths, and an output from the second MUX/DEMUX wherein the attenuated optical signals are combined at the second MUX/DEMUX into a multiplexed stream which is output on the output wherein the attenuator means comprises reflector means such that attenuation is achieved by reflecting all or a proportion of the optical signal on the respective channel and the reflector means comprises a mirror in combination with a controllable, optically absorbing material.

13. (Cancelled)

14. (Original) An optical attenuation device according to claim 12 wherein the attenuator means comprises transmission means such that attenuation is achieved by transmitting all or a proportion of the optical signal on the respective channel.

15. (Currently amended) A method of attenuating a multiplexed optical stream comprising de-multiplexing the stream thereby to separate the stream into individual optical signals, attenuating at least one of the signals by reflection using a mirror in combination with a controllable, optically absorbing material and multiplexing the attenuated signals thereby to combine the signals into a multiplexed stream.

16. (Currently amended) A method of attenuating a multiplexed optical stream comprising de-multiplexing the stream thereby to separate the stream into individual optical signals, attenuating each signal in parallel with the other signals using reflection means comprising a mirror in combination with a controllable, optically absorbing material and multiplexing the attenuated signals thereby to combine the signals into a multiplexed stream.

17. (Currently amended) Reflector means for an optical attenuation device ~~according to claim 1~~ comprising an input/output on which a multiplexed optical input stream is received, a multiplexer/de-multiplexer (MUX/DEMUX) for separating the received stream into individual optical signals on individual channels, an

output/return path from the MUX/DEMUX for each of the channels, reflector means in each output/return path for reflecting all or a proportion of the optical signal on the respective channel back along the output/return path to the MUX/DEMUX and the optical signals are re-combined by the MUX/DEMUX into a multiplexed stream which is output on the input/output wherein at least one reflector means comprises a mirror in combination with a controllable, optically absorbing material.

18. (Currently amended) Reflector means for an optical attenuation device ~~according to claim 13~~ comprising an input on which a multiplexed optical input stream is received, a first MUX/DEMUX separating the received stream into individual optical signals on individual channels, an output path from the MUX/DEMUX for each of the channels, attenuator means in each output path for attenuating the optical signal on the respective channel, a return path from the attenuator means for each of the channels, a second MUX/DEMUX at the ends of the return paths, and an output from the second MUX/DEMUX wherein the attenuated optical signals are combined at the second MUX/DEMUX into a multiplexed stream which is output on the output wherein the attenuator means comprises reflector means such that attenuation is achieved by reflecting all or a proportion of the optical signal on the respective channel and the reflector means comprises a mirror in combination with a controllable, optically absorbing material.

19. (Currently amended) MUX/DEMUX for an optical attenuation device ~~according to claim 1~~ comprising an input/output on which a multiplexed optical input stream is received, a multiplexer/de-multiplexer (MUX/DEMUX) for separating the received stream into individual optical signals on individual channels, an output/return path from the MUX/DEMUX for each of the channels, reflector means in each output/return path for reflecting all or a proportion of the optical signal on the respective channel back along the output/return path to the MUX/DEMUX and the optical signals are re-combined by the MUX/DEMUX into a multiplexed stream which

is output on the input/output wherein at least one reflector means comprises a mirror in combination with a controllable, optically absorbing material.

20. (Currently amended) MUX/DEMUX for an optical attenuation device ~~according to claim 12~~ comprising an input on which a multiplexed optical input stream is received, a first MUX/DEMUX separating the received stream into individual optical signals on individual channels, an output path from the MUX/DEMUX for each of the channels, attenuator means in each output path for attenuating the optical signal on the respective channel, a return path from the attenuator means for each of the channels, a second MUX/DEMUX at the ends of the return paths, and an output from the second MUX/DEMUX wherein the attenuated optical signals are combined at the second MUX/DEMUX into a multiplexed stream which is output on the output wherein the attenuator means comprises reflector means such that attenuation is achieved by reflecting all or a proportion of the optical signal on the respective channel and the reflector means comprises a mirror in combination with a controllable, optically absorbing material.

21. (Original) An optical communications network incorporating at least one optical attenuation device according to claim 1.

22. (Original) An optical communications network incorporating at least one optical attenuation device according to claim 11.

23. (Original) An optical communications network incorporating at least one optical attenuation device according to claim 12.